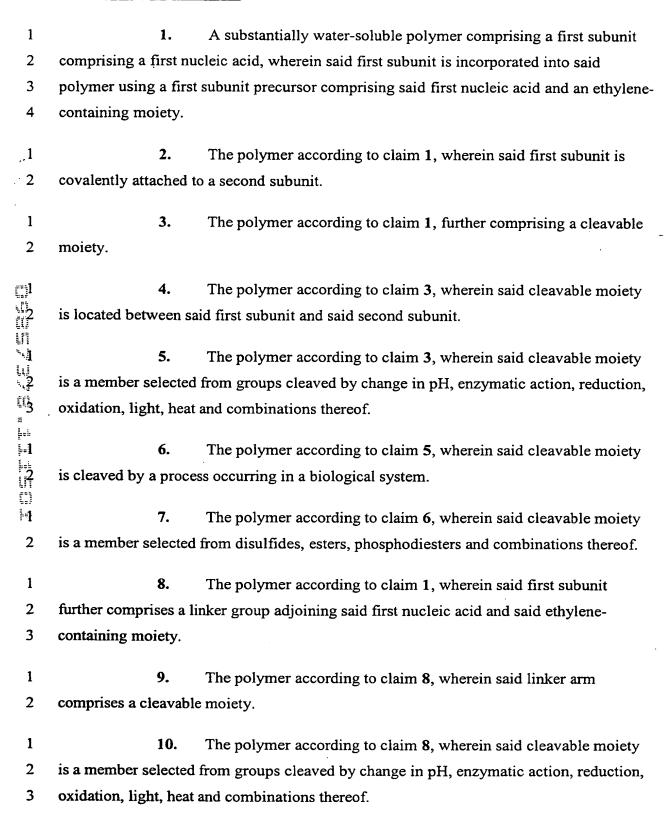
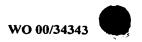
WHAT IS CLAIMED IS:





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enhances cellular uptake.

1 The polymer according to claim 9, wherein said cleavable moiety 11. 2 is cleaved by a process occurring in a biological system. 1 12. The polymer according to claim 10, wherein said cleavable moiety is a member selected from disulfides, esters, phosphodiesters and combinations thereof. 2 1 13. The polymer according to claim 1, wherein said ethylenecontaining moiety comprises a member selected from -CH2=CHX1, -CH2=CX2Y1 and 2 3 combinations thereof, wherein X^{1} , X^{2} and Y^{1} are members independently selected from H, (=0), —NR¹R², 4 —OH, and —OR³, wherein 5 R¹, R² and R³ are members independently selected from H, alkyl, 6 substituted alkyl, aryl and substituted aryl. The polymer according to claim 13, wherein R¹, R² and R³ are 14. independently selected from H, alkyl and substituted alkyl. The polymer according to claim 14, wherein R¹, R² and R³ are 15. independently selected from H, alkyl and alkyl substituted with at least one moiety selected from —OH, —O— and combinations thereof. The polymer according to claim 15, wherein at least one of R¹, R² 16. and R³ comprises a moiety selected from poly(ethyleneglycol), poly(propyleneglycol) and 3 combinations thereof. 1 The polymer according to claim 1, wherein said polymer comprises 17. 2 a member selected from acrylate, acrylamide, C₁-C₆ alkylacrylate, (alkyl)acrylamide, 3 methylmethacrylate, triethyleneglycolmethacrylate, poly(ethyleneglycol)methacrylate, 4 hydroxyethylmethacrylate, glycerylmethacrylate, vinyl alcohol, ethylcyanoacrylate and 5 combinations thereof. 1 The polymer according to claim 1, further comprising a tissue-18. 2 specific targeting moiety. 1 19. The polymer according to claim 1, further comprising a moiety that

| 1 | 20. | The polymer according to claim 1, further comprising a nucleic | |
|-----------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------------|--|
| 2 | acid compacting moiety. | | |
| 1 | 21. | The polymer according to claim 1, wherein said first nucleic acid is | |
| 2 | hybridized to a secon | | |
| 1 | 22. | The polymer according to claim 21, wherein said first nucleic acid | |
| 2 | is a single-stranded n | - | |
| | is a shighe stranded in | | |
| - 1 | 23. | The polymer according to claim 21, wherein said first nucleic acid | |
| 2 | is a double-stranded nucleic acid. | | |
| 1 | 24. | The polymer according to claim 22, wherein said second nucleic | |
| | acid is a double-stranded nucleic acid. | | |
| 1 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 2.5 | | |
| | 25. | The polymer according to claim 23, wherein said second nucleic | |
| `.]∠ [[] | acid is a single-strand | ded nucleic acid. | |
| = 1 ==== | 26. | The polymer according to claim 1, wherein said polymer is a | |
| <u></u> երե2 | homopolymer of said first subunit. | | |
| 1 1 | 27. | The polymer according to claim 1, wherein said polymer is a | |
| [] ⁻ }2 | | est subunit and a second subunit. | |
| | | | |
| 1 | 28. | The polymer according to claim 27, wherein said second subunit | |
| 2 | comprises a third nuc | cleic acid. | |
| 1 | 29. | The polymer according to claim 28, wherein said third nucleic acid | |
| 2 | has a sequence different from that of said first nucleic acid. | | |
| 1 | 30. | A polymeric particle comprising a first subunit comprising a first | |
| 2 | | a said first subunit is incorporated into said polymer using a first | |
| 3 | subunit precursor comprising an ethylene-containing moiety. | | |
| _ | - | | |
| 1 | 31. | The particle according to claim 30, wherein said first subunit | |
| 2 | _ | inker group adjoining said first nucleic acid and said ethylene- | |
| 3 | containing moiety. | | |

| 1 | 32. | The particle according to claim 31, wherein said linker arm |
|-----------------|----------------------------------|----------------------------------------------------------------------------------------------------|
| 2 | comprises a cleavable | e moiety. |
| 1 | 33. | The particle according to claim 31, wherein said cleavable moiety |
| 2 | is a member selected | from groups cleaved by change in pH, enzymatic action, reduction, |
| 3 | oxidation, light, heat | and combinations thereof. |
| 1 | 34. | The particle according to claim 32, wherein said cleavable moiety |
| 2 | is cleaved by a proce | ss occurring in a biological system. |
| 1 | 35. | The particle according to claim 33, wherein said cleavable moiety |
| 2 | is a member selected | from disulfides, esters and combinations thereof. |
| == == === | 36. | The particle according to claim 30, wherein said ethylene- |
| #1 | | |
| 1 <u>7</u> | | mprises a member selected from — $CH_2=CHX^1$, — $CH_2=CX^2Y^1$ and |
| | combinations thereof | |
| | | are members independently selected from H, (=O), -NR ¹ R ² , |
| | • | d—OR ³ , wherein |
| 6 | R^1, R^2 | and R ³ are members independently selected from H, alkyl, |
| 7 | su | bstituted alkyl, aryl and substituted aryl. |
| -7 -1 | 37. | The particle according to claim 36, wherein R ¹ , R ² and R ³ are |
| 2 | independently selecte | ed from H, alkyl and substituted alkyl. |
| 1 | 38. | The particle according to claim 37, wherein R ¹ , R ² and R ³ are |
| 2 | independently selecte | ed from H, alkyl and alkyl substituted with at least one moiety |
| 3 | selected from —OH, | —O— and combinations thereof. |
| 1 | 39. | The particle according to claim 38, wherein at least one of R ¹ , R ² |
| 2 | and R ³ comprises a m | noiety selected from poly(ethyleneglycol), poly(propyleneglycol) and |
| 3 | combinations thereof | • |
| 1 | 40. | The particle according to claim 30, wherein said polymer |
| 2 | comprises a member | selected from acrylate, acrylamide, C ₁ -C ₆ alkylacrylate, |
| 3 | (alkyl)acrylamide, mo | ethylmethacrylate, triethyleneglycolmethacrylate, |
| | | |

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- poly(ethyleneglycol)methacrylate, hydroxyethylmethacrylate, glycerylmethacrylate, vinyl alcohol, ethylcyanoacrylate and combinations thereof.
- 1 41. The particle according to claim 30, further comprising a tissue-2 specific targeting moiety.
- 1 42. The particle according to claim 30, further comprising a moiety 2 that enhances cellular uptake.
- 1 43. The particle according to claim 30, further comprising a nucleic 2 acid compacting moiety.
 - 44. The particle according to claim 30, wherein said first nucleic acid is hybridized to a second nucleic acid.
 - 45. The particle according to claim 44, wherein said first nucleic acid is a single-stranded nucleic acid.
 - 46. The particle according to claim 44, wherein said first nucleic acid is a double-stranded nucleic acid.
 - 47. The particle according to claim 45, wherein said second nucleic acid is a double-stranded nucleic acid.
 - 48. The particle according to claim 46, wherein said second nucleic acid is a single-stranded nucleic acid.
- 1 49. The particle according to claim 30, wherein said polymer is a 2 homopolymer of said first subunit.
- 1 50. The particle according to claim 30, wherein said polymer is a copolymer of said first subunit and a second subunit.
- 1 51. The particle according to claim 50, wherein said second subunit 2 comprises a third nucleic acid.
- 1 52. The particle according to claim 51, wherein said third nucleic acid 2 has a sequence different from that of said first nucleic acid.

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- The particle according to claim 30, wherein said particle is substantially water-soluble.
- The particle according to claim 30, wherein said particle is substantially water-insoluble.
 - 55. The particle according to claim 30, further comprising a bioactive compound encapsulated by said polymer.
 - 56. A pharmaceutical formulation comprising a pharmaceutically acceptable carrier and a substantially water-soluble polymer comprising a first subunit comprising a first nucleic acid, wherein said first subunit is incorporated into said polymer using a first subunit precursor comprising said first nucleic acids and an ethylene-containing moiety.
 - 57. A pharmaceutical formulation comprising a pharmaceutically acceptable carrier and a polymeric particle comprising a first subunit comprising a first nucleic acid, wherein said first subunit is incorporated into said polymer using a first subunit precursor comprising said first nucleic acid and an ethylene-containing moiety.
 - 58. A method for treating or preventing a condition, the method comprising administering to a subject a substantially water-soluble polymer in an amount effective to treat or prevent said condition, said polymer comprising a first subunit comprising a first nucleic acid, wherein said first subunit is incorporated into said polymer using a first subunit precursor comprising said first nucleic acid and an ethylene-containing moiety.
 - 59. A method for treating or preventing a condition, the method comprising administering to a subject a polymeric particle in an amount effective to treat or prevent said condition, said particle comprising a first subunit comprising a first nucleic acid, wherein said first subunit is incorporated into said polymer using a first subunit precursor comprising said first nucleic acid and an ethylene-containing moiety.
 - 60. A method for introducing a polynucleotide into a eukaryotic cell in a living animal comprising contacting the cell with a composition comprising:

WO 00/34343

| 3 | a substantially water-soluble polymer comprising a first subunit | | |
|-------------|---------------------------------------------------------------------------------------------|--|--|
| 4 | comprising a first nucleic acid, wherein said first subunit is incorporated into said | | |
| 5 | polymer using a first subunit precursor comprising said first nucleic acid and an ethylene- | | |
| 6 | containing moiety. | | |
| 1 | 61. The method of claim 60, wherein said composition is administered | | |
| 2 | in an amount comprising about 0.5 µg to 20 mg of nucleic acid. | | |
| 1 | 62. The method of claim 60, wherein the eukaryotic cell is a | | |
| 2 | mammalian cell. | | |
| 1 | 63. The method of claim 60, wherein the composition is administered | | |
| 2 | by a route selected from the group consisting of oral, transdermal, systemic and inhalation | | |
| 3 | routes. | | |
| | 64. The method of claim 63 wherein the composition is administered | | |
| . <u></u> 2 | transdermally by high velocity impaction administration to the skin surface. | | |
| () : 1 | 65. A method for introducing a polynucleotide into a eukaryotic cell in | | |
| 2 | a living animal comprising contacting the cell with a composition comprising: | | |
| 3 | a polymeric particle comprising a first subunit comprising a first nucleic | | |
| 3 4 5 | acid, wherein said first subunit is incorporated into said polymer using a first subunit | | |
| 5 | precursor comprising said nucleic acid and an ethylene-containing moiety. | | |